1920-1990

70 seventy years of service

researched and
written by

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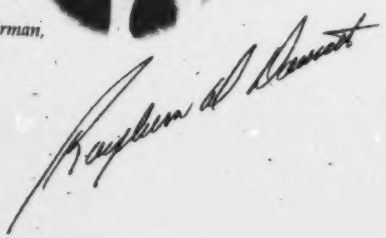
91-01801/

foreword

Until recently, NB Power was known to many New Brunswickers as "the hydro". This name is rooted in our historical traditions. The first Europeans who settled this province immediately began constructing dams and mills that turned waterpower into mechanical power.

Rayburn D. Doucett, chairman, NB Power



The New Brunswick Electric Power Commission was formed in 1920 and quickly followed the lead of the New Brunswick pioneers by harnessing the Musquash River to convert hydro power into electricity. From this beginning, NB Power has grown to become a major component in the development of New Brunswick's economy and in our quality of life.

This book tells the story of NB Power's role in the development of the electric power industry in New Brunswick and how this form of energy has become an integral part of our everyday lives.

preface

Great strides have been made, particularly during the last 100 years, in the manufacture and delivery of electricity. Industrialization has provided the impetus to search for sophisticated new methods of generating and transmitting electric power.

Seventy Years of Service is the story in words and pictures of how NB Power delivered electricity to New Brunswick. The words tell the story of the utility's attempt to satisfy the province's increasing demand for electricity. The pictures do much to bring the words to life. They record the significant events and places, many of which have been forgotten. The photographs also recall the faces of the men and women who worked to make electricity available in all areas of the province.

Many sources have been consulted in order to compile the information presented in this book. The research revealed many fascinating aspects of the story of NB Power that could not be dealt with satisfactorily given the scope of this publication. These will be examined in greater detail in a future work.

Many people merit recognition for their assistance in the production of this book. Foremost among them are Janice Haig and her staff in Visual Communications for their co-operation in dealing with the numerous photographs that had to be copied and printed. Karen Smith's contribution to the design and copy layout is particularly noteworthy. Anne Marie Slocum and her staff in Records Management facilitated access to a great many written records. Julie Robinson and the staff of the Reference Centre provided published material. Thanks to Christine Nassrallah and her staff, particularly Genevieve Jain, for their excellent translation and to Public Affairs for their constant support, especially Jeffrey Carleton who did the editing. A large number of other people throughout the province provided information and guidance: rather than single out any other individuals, a special thanks is tendered to the people of New Brunswick. We believe that this book will enhance the diverse heritage that is ours.

Dick Myra

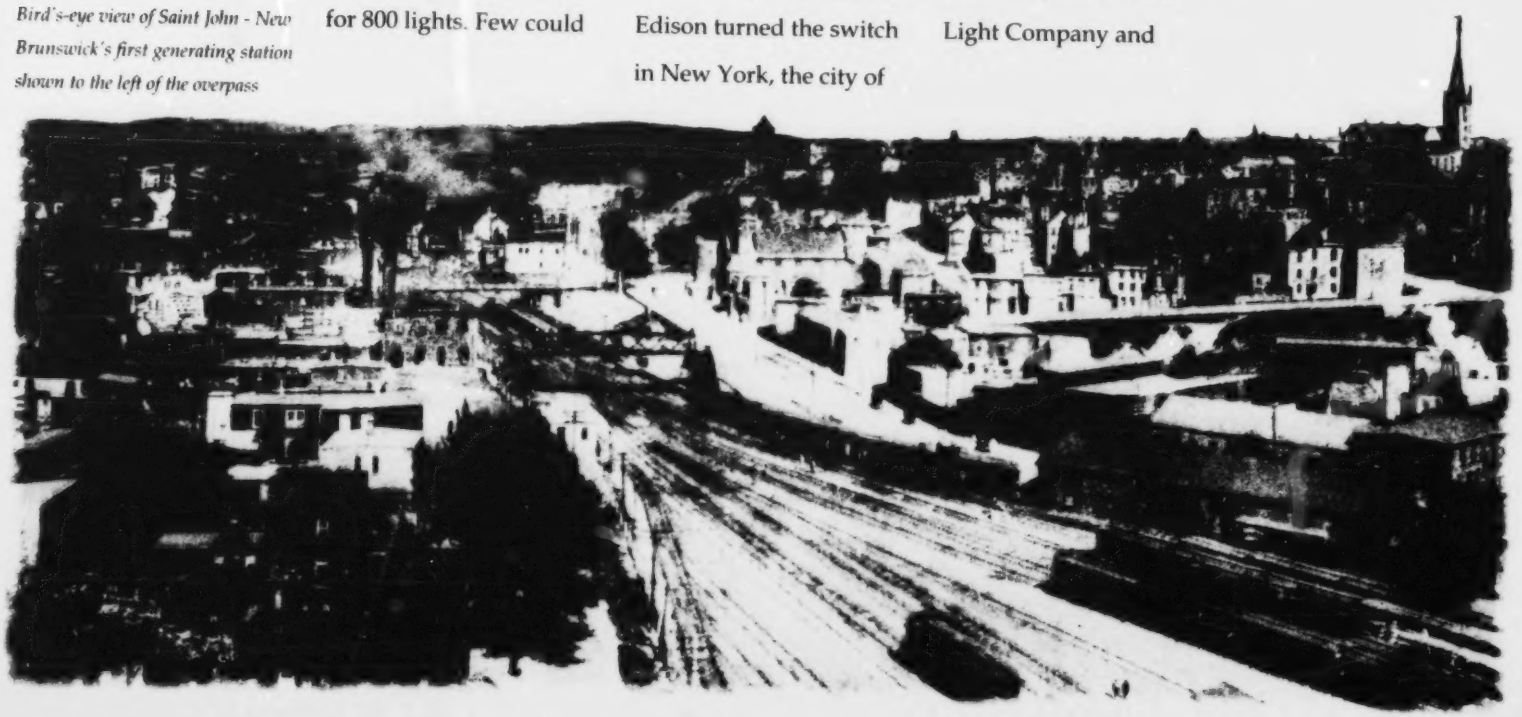
Pre 1920

in the beginning - electricity comes to New Brunswick

On the afternoon of September 4, 1882, Thomas Edison turned a switch at the Pearl Street generating station in New York City and energized the world's first large scale electrical distribution system. The Edison system operated at about 110 volts direct current on a two-wire plan and it provided enough energy for 800 lights. Few could foresee the immense social and economic impact that Edison's new distribution system was to have on the industrialized world.

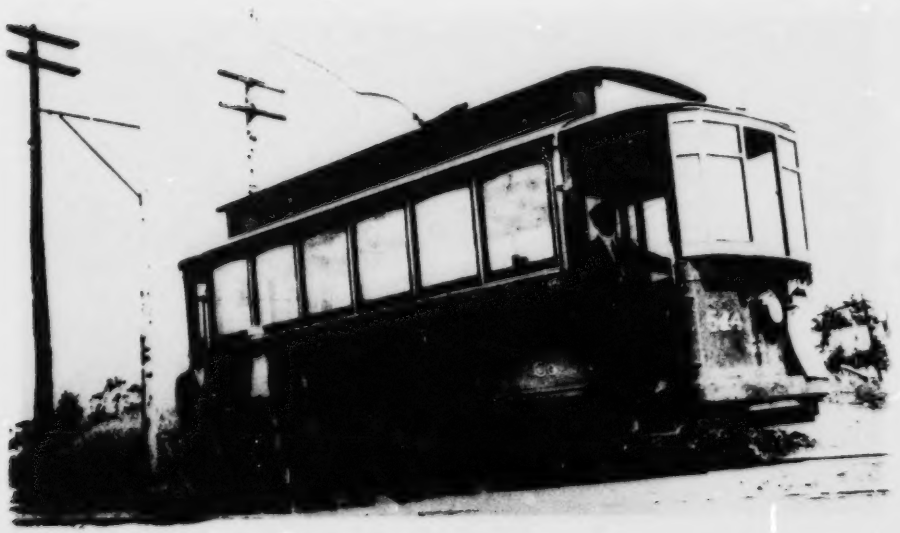
Private interests in New Brunswick were not long in realizing the potential of this new and revolutionary technology. Less than two years after Edison turned the switch in New York, the city of Saint John became the first place in New Brunswick to have commercially available electric power. In 1884, the Saint John Electric Light Company built a plant on Paradise Row and began producing and distributing electricity. Two years later, the Saint John Gas & Light Company bought the Saint John Electric Light Company and

Bird's-eye view of Saint John - New Brunswick's first generating station shown to the left of the overpass



became the sole distributor of gas and electricity in the city. This monopoly lasted until 1890 when the New Brunswick Electric Company began producing power in its new plant on Princess Street and the Eastern Electric Company opened its new facility on Water Street.

Electricity was not used exclusively for lighting streets and houses in Saint John. The 1890s also ushered in the era of electric-powered public transit systems. The Consolidated Electric Company, incorporated in 1892, announced plans to electrify and extend the existing horsepowered street railway system in Saint John. Six electrified horse cars were purchased in Boston and poles and wires were erected. The system required more electricity than the existing plants could supply so a new powerhouse with a 133 horsepower generator was constructed on the corner of Union and Dock Streets. The first electric trolley cars appeared on the streets of Saint John on March 31, 1893. The streetcars proved to be a viable public transportation system providing



Electric trolley car

reliable service to citizens of the port city for the next 55 years.

By 1917, the different Saint John electric companies had merged and were renamed the New Brunswick Power Company. The company modified and upgraded the original plants from time to time but eventually abandoned them for more modern facilities. The Dock Street plant was an exception. It expanded as new equipment was added to meet growing requirements. The New Brunswick Electric Power Commission purchased the assets of the New Brunswick Power Company in 1948 and continued to operate the Dock Street plant until August 23, 1976.

The Moncton Gas, Light and Water Company supplied coal gas to the city of Moncton in the early 1880s. In 1886, the company ventured into the electrical generation business with the installation of a 2000 candle-power dynamo in the J. C.

Employees of the Moncton Gas, Light and Water Co., circa 1917

Harris sugar refinery. This plant provided arc lighting for the refinery as well as electricity to nearby churches and stores. The demand for electricity became so great, however, that a new plant with a 1000 light dynamo was built on Mechanic Street in 1887. The development of locally generated power was also spurred on by the requirements of the railroad which was establishing itself as a major industry in Moncton.

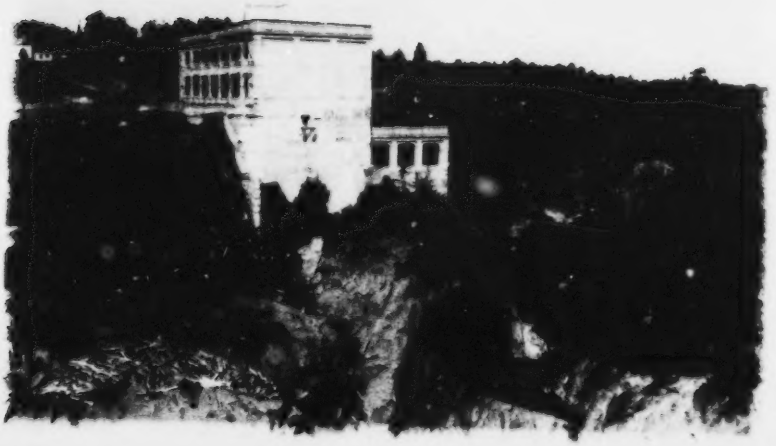
During the late 1880s, there was brisk competition between two companies in Fredericton to satisfy the increasing demand for electricity. The Fredericton Electric Light Company supplied the first commercially available electricity in the city on October 29, 1887. Using the Waterhouse Arc System, they provided electric lights for the skating and curling rinks, seven businesses, and even a lamp at the gate of A. F. Randolph's residence on Regent Street.

The Fredericton Gas Company had been

Interior of the Fredericton Gas Company's Shore Street plant, 1903 (P.A.N.B. P19-100)

providing coal gas for lighting businesses, homes and street lamps from their Shore Street plant since 1850. The company realized that electric lighting was going to involve tough competition and began producing electricity in their gas plant in 1888. City council granted the Fredericton Electric Light Company permission to install poles on the south side of Queen Street while the Fredericton Gas Company was granted permission to set poles on the north side of Queen Street. In addition, the telephone company already had poles in place along the street. This unsightly maze of poles and wires caused a public outcry. In 1889, the two companies merged and their equipment was installed in a building at 120 Carleton Street. Today this building houses City Sales & Service Ltd., the Peugeot dealership.

The rapid spread of electrification in New Brunswick was not confined to the cities. However, the development of generation facilities in smaller jurisdictions was irregular. The town of Woodstock



Nepisiguit Falls hydro plant, Consolidated Bathurst Ltd., 1920

had two small electric light companies by the 1880s which operated in conjunction with the Small & Fisher and Connell Brothers iron foundries. Both were later superseded by the Woodstock Electric Railway Light and Power Company which built a dam and a powerhouse on the Meduxnekeag River in 1905-1906. In July 1906 the company began distributing hydro-generated power to homes and businesses in the town.

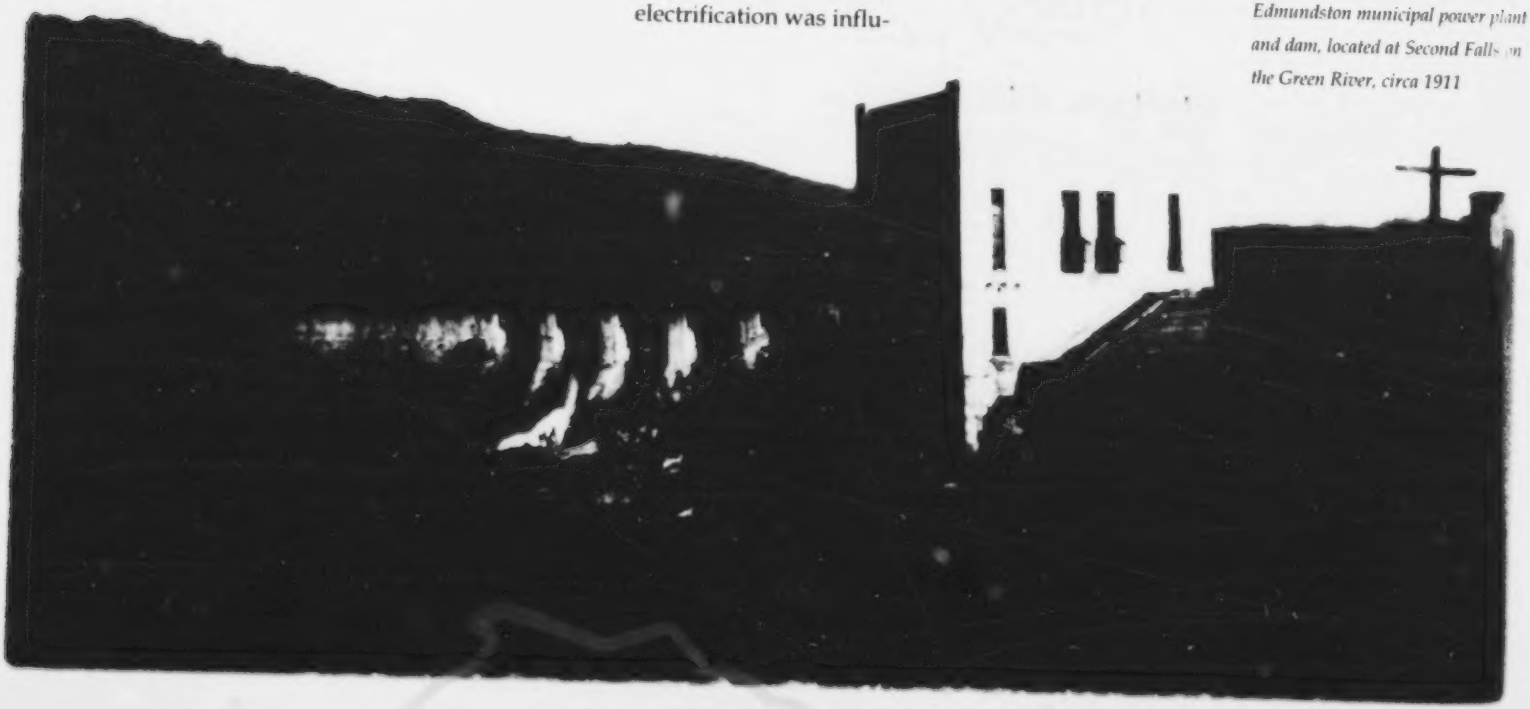
In Campbellton, the town council assumed responsibility for the generation and distribution of electricity. A 50 kilowatt generator was installed on Prince William Street in 1898 and, as an inducement to prospective customers, the town undertook to do all open wiring free. The program was very popular making it necessary for a 100 kilowatt unit to be installed by 1902 and another plant to be added in 1911. In 1942, the town council entered into an agreement with the Lower St. Lawrence Power Company to purchase power from their hydro

Connell Bros. thermal plant, Woodstock, 1905

development at Mētis, Quebec. The town continued to operate its own electric light department until December 31, 1977, when all of the assets of the municipal system were purchased by The New Brunswick Electric Power Commission.

The Sussex Electric Light Company, organized in 1896, installed a plant in a building on Church Avenue. The plant began producing electricity in November of that year but had few customers. Later, the plant was sold to the Sussex Manufacturing Company which supplied the town with electrical energy until 1923.

The rush to acquire electrification was influenced by a number of different factors. In some towns it was achieved with relative ease while other towns had to wait. Loggieville and Newcastle had electricity in 1912 because of the generation possibilities created by factories in both towns, and Grand Falls had electricity by 1913 because of the development of the



Edmundston municipal power plant and dam, located at Second Falls on the Green River, circa 1911

Aroostook Falls by American interests. The village of McAdam did not have electricity for its residents until 1923 when the local light commission purchased surplus power from the Canadian Pacific Railway shops.

By 1918, approximately 20 organizations were in the business of producing power in the province. They were located in the larger urban cer 'res and there were no standards to govern rates or services. In Saint John, for example, the price paid by a home-owner ranged from a low of 7.5 cents per kilowatt-hour to a high of 15 cents depending upon location and the amount of power consumed. Following the First World War, the development of hydroelectric power became a major policy initiative of the government. Inexpensive electricity promised to raise the quality of life for the average citizen and pave the way for industrial development and prosperity in a province where fortunes had been declining for almost 50 years.

Pulp and paper company power plant, St. George, circa 1905 (National Archives of Canada, PA 41747)

bio

Clifford W. Robinson

Clifford Robinson's success in law, business and public service was undoubtedly due to his quiet nature. A local historian has noted that "although he had a long career in public life, he often appeared to be a reluctant participant, sought after by others because he was a popular and credible candidate". It was precisely these qualities that made him the right man to guide the Commission after its inception.

A native of Moncton, Robinson was educated at Mount Allison University and was called to the bar in 1893. Robinson was active in Moncton civic politics before he won election by acclamation to the New Brunswick legislature in 1897. In a distinguished career in provincial affairs, Robinson was Speaker of the House, a member of the Executive Council, Provincial Secretary and Attorney General. He succeeded William Pugsley as premier on May 31, 1907, in the 'year of the three premiers'. However, his tenure as premier lasted little more than one year as the Liberal Party was defeated in the next provincial election. Robinson remained Leader of the Opposition until 1910 when he retired from politics. His retirement did not last long and, following the provincial election of 1917, he served as the minister of lands and mines before being called to the Senate.

Robinson's background in business and governm made him the natural ch as the first chairman of T New Brunswick Electric Power Commission. He instrumental in establish the new utility and in resolving land and water disputes with private interests.

Clifford Robinson was appointed to the Senate o May 5, 1924. He died in Montreal in 1944.

C. W. Robinson,
first chairman of
The New Brunswick Electric
Power Commission, 1920
(P.A.N.B., P37-119)

the nineteen twenties - the early years

After the First World War there was a public perception in New Brunswick that light and power were necessities of life and were therefore the responsibility of government. The government of Premier Walter E. Foster also recognized the important role that electricity would play in the economic development of the province. It enacted the New Brunswick Electric Power Act on April 24, 1920, which established The New Brunswick Electric Power Commission. The original Commission consisted of the Honourable C. W. Robinson, chairman; C. O. Foss, commissioner and chief engineer; and Reid McManus,

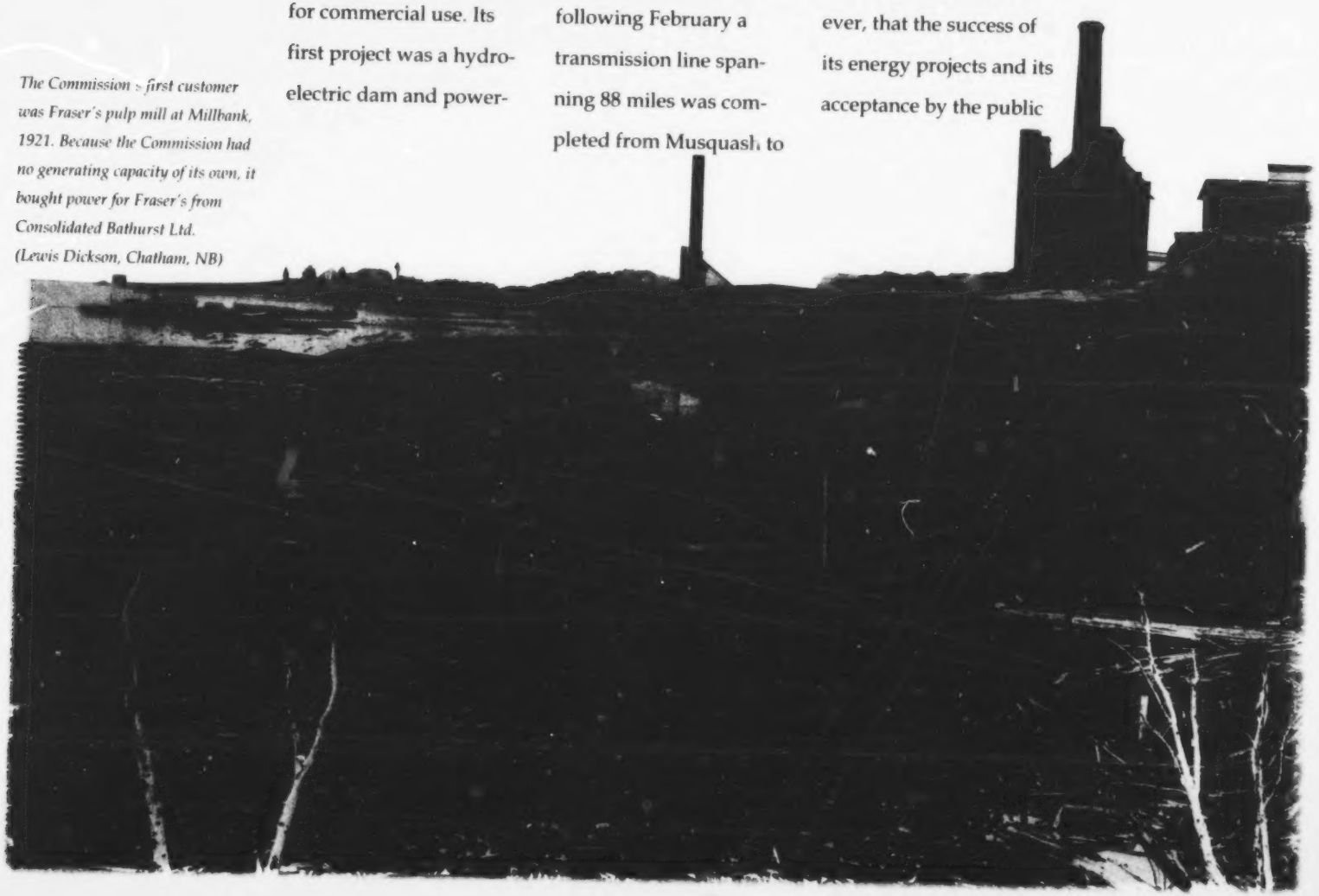
C. O. Foss, commissioner and chief engineer, 1920

The Commission's headoffice, Saint John, 1927 to 1948

commissioner and secretary.

The Commission immediately began formulating plans to generate electrical energy for commercial use. Its first project was a hydro-electric dam and power-house on the Musquash River. By the spring of 1922 the contract was completed on schedule at a cost of $2 million. The following February a transmission line spanning 88 miles was completed from Musquash to Fairville and then to Moncton, supplying power to Moncton, Sussex and Saint John.

The Commission would soon learn, however, that the success of its energy projects and its acceptance by the public



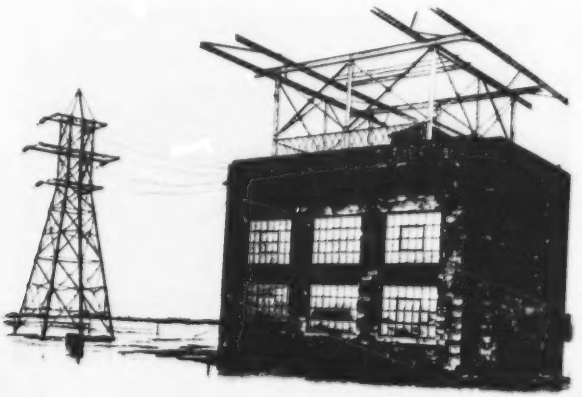
The Commission's first customer was Fraser's pulp mill at Millbank, 1921. Because the Commission had no generating capacity of its own, it bought power for Fraser's from Consolidated Bathurst Ltd. (Lewis Dickson, Chatham, NB)

was by no means assured. Following the completion of the Musquash dam, the Commission began to develop plans for a plant at Grand Falls. Although it was considered the best hydro site on the Saint John River, there was considerable debate over whether public or private interests should develop the falls. It appeared that development was going to proceed under Commission guidance but problems at Musquash in the spring of 1923 derailed their plans. The earthfilled dam, unable to withstand the combination of heavy rains and melting snow, gave way. The resulting property damage, the loss of generating capacity, and the loss of public confidence threatened the

Line crew in Norton, 1921

very survival of the fledgling Commission. Subsequently, the Saint John River Power Company, a subsidiary of the International Paper Company, was given the rights to develop the generating station at Grand Falls and in 1930 the plant was officially opened.

Fortunately for the Commission, the accident did little to dampen the public's demand for electricity. Most industries were seeking to modernize their operations and required reliable service while larger urban areas needed large blocks of power. The opportunity to develop electrical



Cranston Avenue, Saint John, the Commission's first substation, 1921

Constructing the Grand Falls generating station, 1926

generating and distribution systems to meet this demand did much to salvage the Commission's credibility.

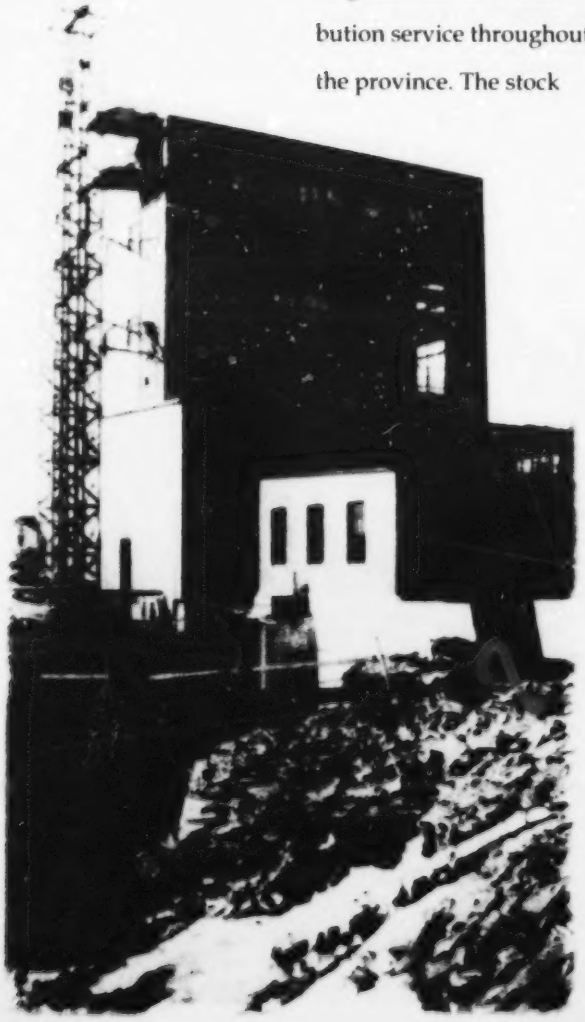
The Commission could not fill all of these requirements immediately. In some municipalities, industries bought blocks of power from private generating stations. There was even cooperation between municipal governments and private industry to build and maintain generating plants. During the 1920s the spread of electrification was largely an urban phenomenon. Rural electrification was not economically feasible as demand was low and the capital cost of stringing lines was prohibitive.

Lord Willingdon, Governor General of Canada (left) and Premier J. B. M. Baxter at the Grand Falls opening, 1930

the nineteen thirties - from hydro to coal

The 1930s was a decade of consolidation for the Commission and an opportunity to improve its generation and distribution service throughout the province. The stock market crash in 1929 had an adverse effect on the entire North American economic system. No government or business had escaped its effects and it was a time for cautious development.

In the late 1920s, the Commission had decided to base part of its future development on indigenous coal from the Minto area. By 1931 it had built



The Grand Lake "steam" plant under construction, 1931

The legendary Mr. Green, superintendant at the Grand La plant, habitually wore white glo to work to check the cleanliness the plant

its first thermal generating plant at Grand Lake to supply electricity to the city of Fredericton and the cotton mill in Marysville. The generating station, which would use about 20,000 tons of coal annually, also provided a steady market for the local coal industry.

The decade was also a time of minor expansion as the Commission began to expand its distribution system by building new lines and acquiring existing systems. In 1930 the International Paper Company built a transmission line from the

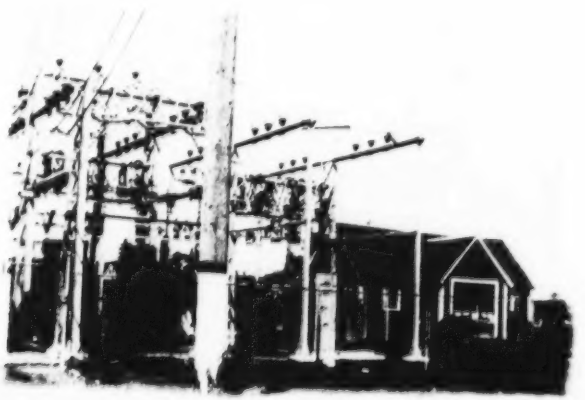
Line building, Grand Lake to Marysville/Fredericton, 1931

hydro generating station in Grand Falls to its new paper mill in Dalhousie.

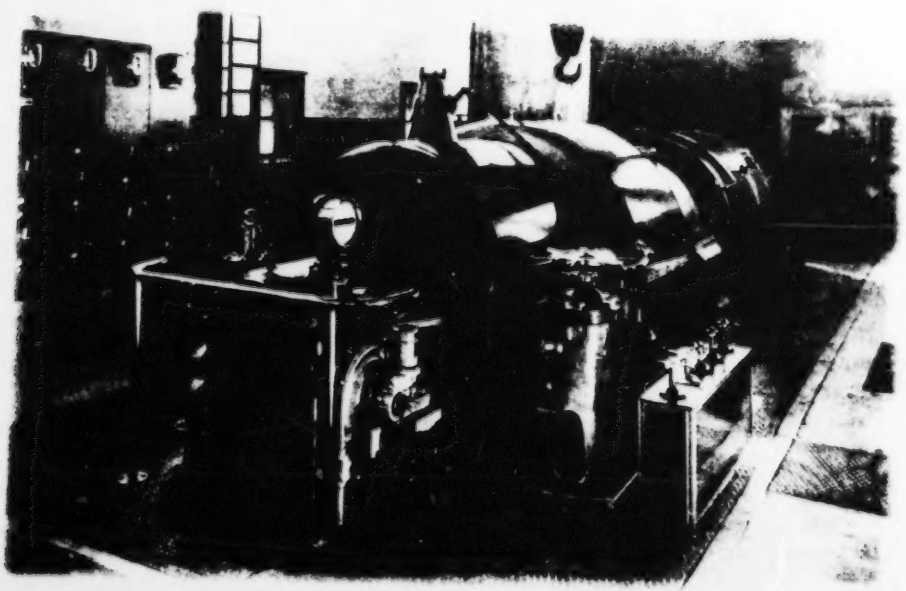
The Commission seized the opportunity to purchase surplus power from the company and constructed a power line from Dalhousie to Belledune to serve the residents along the coast. The line was placed in service in October 1932.

In 1934 the Commission bought the distribution systems of the towns of Newcastle and Chatham. These were municipal systems whose power came from the Bathurst Company Limited, a paper company which had a hydro plant

Louise Glennie, secretary-treasurer & manager of the Grand Manan Light and Power Company. Miss Glennie was also secretary to A. A. Dysart, Commission chairman and premier of New Brunswick



Substation built in Devon in 1931 to serve Fredericton



Grand Lake Unit 3, 1936

at Nepisiguit Falls. By now, the Commission had power to spare because of its new plant at Grand Lake. A line was quickly built from Grand Lake to Nelson-Miramichi to supply Newcastle and Chatham.

In 1936 a new unit was added to the Grand Lake plant creating an even greater demand for Minto coal. The railways and other industries objected to the price arranged between the government-controlled Commission and the coal producers - $2.70 per ton of coal. They retaliated by cutting back

Building the line from Grand Lake to Nelson-Miramichi. The Cains River footbridge, 1935

In 1938, residents of Grand Manan Island petitioned the Commission for 24-hour electric lighting. [Lights went out at 11 o'clock at night on the island.] The Commission complied by buying the diesel generating plant at Grand Harbour from the Grand Manan Light and Power Company

on their coal purchases. This reduction in demand caused labour unrest and Minto experienced its first coal miners' strike in 1936. Production at the mines fell and by 1937 the mining companies could not provide the coal necessary to operate the Grand Lake generating station. The Commission was forced to purchase coal from Nova Scotia in order to maintain operation of its vital plant.

By the end of the decade the demand for coal began to improve and the price received by the producers was beginning to increase. Minto miners were back working the mines on a regular basis when events in Europe heralded the beginning of World War Two.

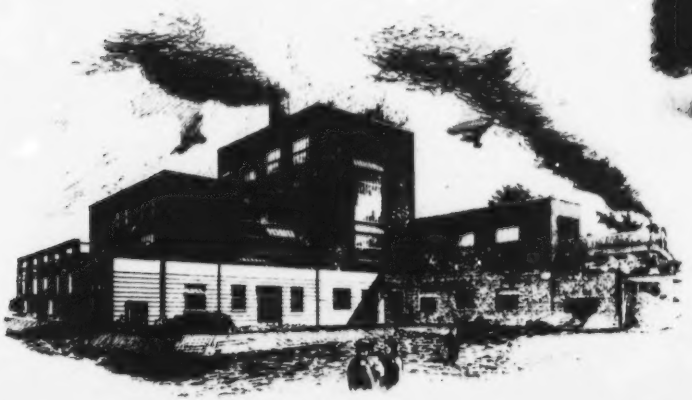
Minto coal miners, circa 1935
(P.A.N.B., P37-293)

the nineteen forties - the war years

The decision by the federal government to provide training facilities for air force personnel from Britain, Canada and other countries in the British Commonwealth had a direct impact upon the Commission. Several training bases were built in New Brunswick and each required a supply of electricity together with distribution lines and substations. Commission employees worked hand in hand with airforce crews in the layout and construction of distribution lines. Some of this work was carried out

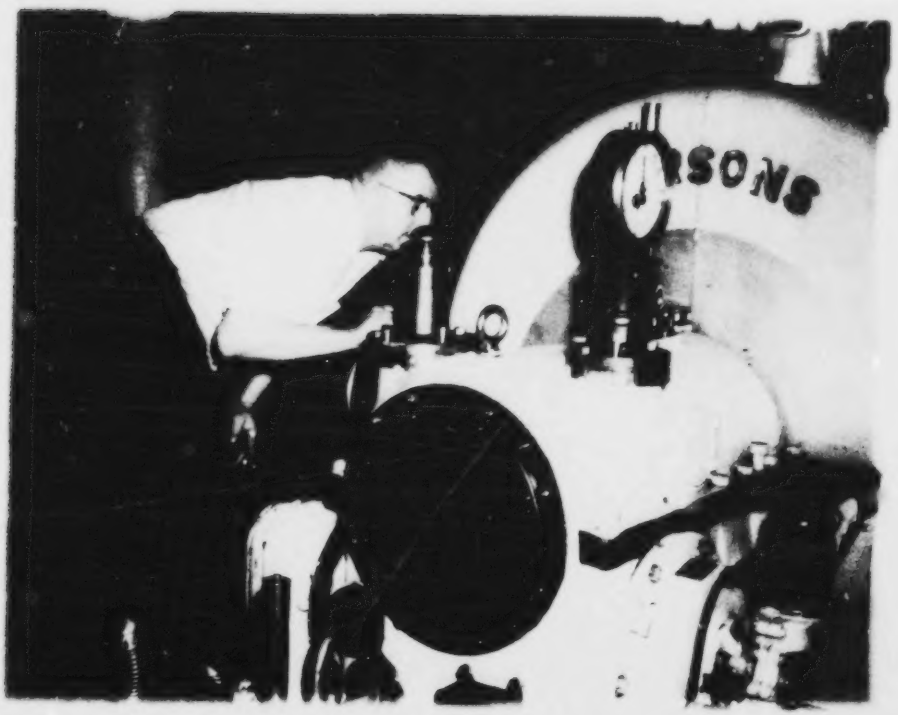
Commonwealth training camp, Scoudouc, 1945 (National Archives of Canada, PA 178358)

The Chatham plant began producing 12,500 kilowatts in 1948



during the winter when frost penetration four feet deep made the opening of holes for pole-setting a difficult and uncomfortable operation. The addition of these services, which required no capital investment and for which prevailing rates were charged, proved to be very profitable for the Commission and allowed a rapid expansion of service after the war.

At the end of the Second World War a new era of prosperity began and with it came a surge of activity and a demand for more electrical energy.

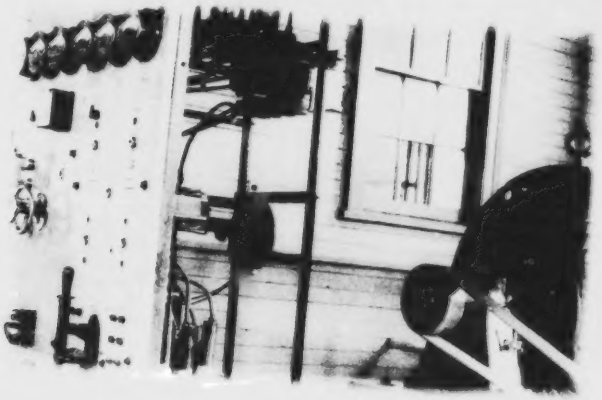


A break in Ken Clark's continuous employment occurred between 1941-45 when he served with the RCNVR during WWII

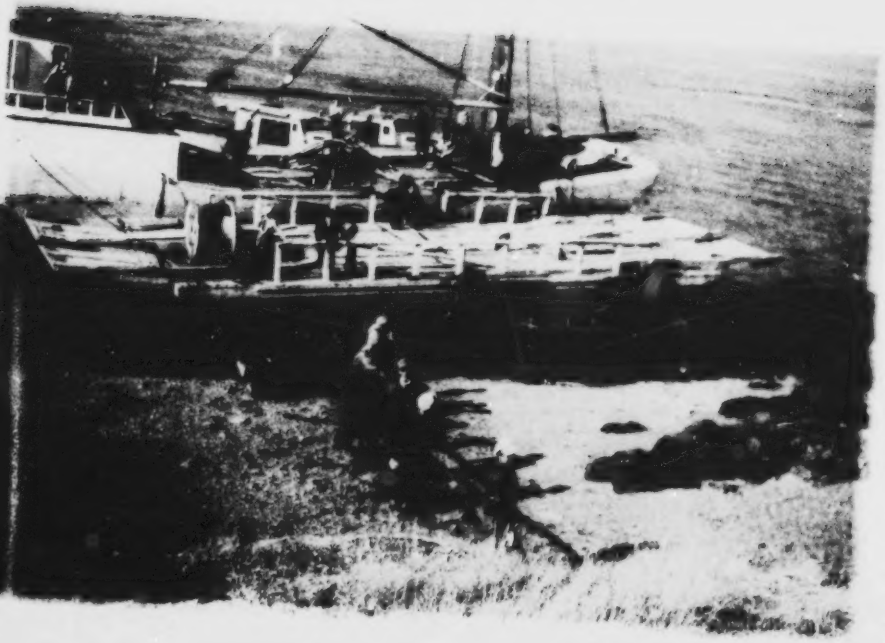
In January 1948 the Dock Street plant was purchased from the New Brunswick Power Company (a private company). Dock Street plant, circa 1929

Electricity generated by burning diesel fuel was a quick and inexpensive way of getting power to isolated communities. In the 1940s diesel plants were installed in St. Stephen, Andover, Campobello, Shippagan and St. Quentin and two more units were added to the original two-unit Grand Manan plant.

All the towns and most of the villages in New Brunswick had electricity but many rural areas were still without electrical service. Many of the farms in New Brunswick remained vacant after the



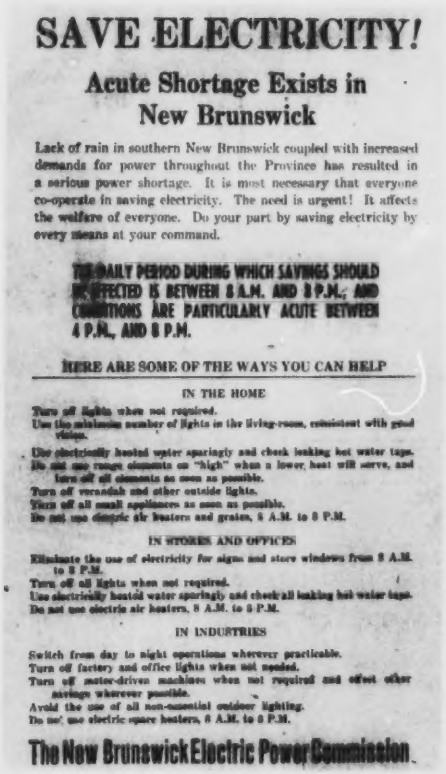
In 1940 a 50 kilowatt diesel unit was installed at St. Quentin



The diesel plant in Campobello was placed on standby when a submarine cable was laid from the mainland in March 1948

war because returning veterans were unwilling to go back to the manual drudgery of farm work. To entice people to return to farming, the government pledged to expand the province's paved highway system and to introduce a rural electrification program.

The rapidly growing demand for electricity in the postwar years, and the increasingly complicated methods required to ensure safe and reliable delivery, necessitated changes in the organization and operation of the Commission. By the end



SAVE ELECTRICITY!

Acute Shortage Exists in New Brunswick

Lack of rain in southern New Brunswick coupled with increased demands for power throughout the Province has resulted in a serious power shortage. It is most necessary that everyone co-operate in saving electricity. The need is urgent! It affects the welfare of everyone. Do your part by saving electricity by every means at your command.

THE DAILY PERIOD DURING WHICH SAVINGS SHOULD BE EFFECTED IS BETWEEN 8 A.M. AND 8 P.M.; AND CONDITIONS ARE PARTICULARLY ACUTE BETWEEN 4 P.M. AND 6 P.M.

HERE ARE SOME OF THE WAYS YOU CAN HELP

IN THE HOME

Turn off lights when not required.
Use the minimum number of lights in the living-room, consistent with good vision.
Use electrically heated water sparingly and check leaking hot water taps.
Do not use range elements on "high" when a lower heat will serve, and turn off all elements as soon as possible.
Turn off verandah and other outside lights.
Turn off all small appliances as soon as possible.
Do not use electric air heaters and grates, 6 A.M. to 8 P.M.

IN STORES AND OFFICES

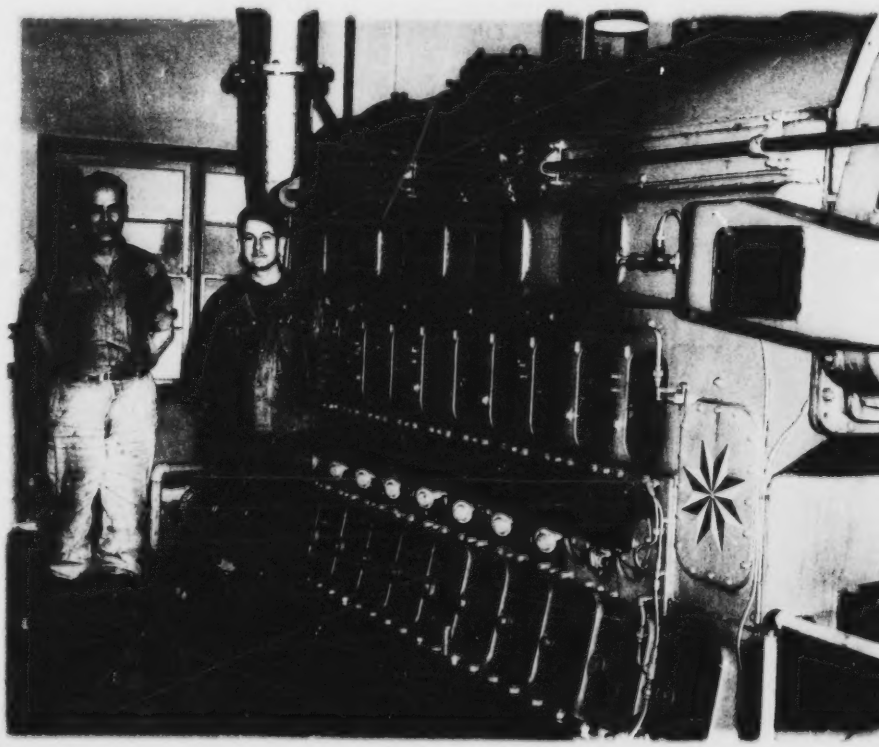
Eliminate the use of electricity for signs and store windows from 8 A.M. to 8 P.M.
Turn off all lights when not required.
Use electrically heated water sparingly and check all leaking hot water taps.
Do not use electric air heaters, 8 A.M. to 8 P.M.

IN INDUSTRIES

Switch from day to night operations wherever practicable.
Turn off factory and office lights when not needed.
Turn off motor-driven machines when not required and effect other savings wherever possible.
Avoid the use of all non-essential outdoor lighting.
Do not use electric space heaters, 8 A.M. to 8 P.M.

The New Brunswick Electric Power Commission

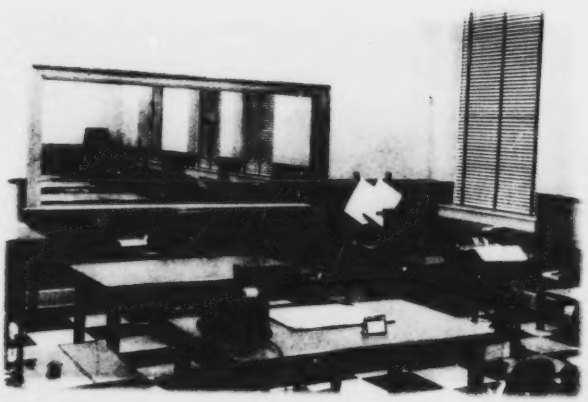
Newspaper advertisement urging customers to save electricity, October 23, 1947



Shippagan diesel plant was instal in 1948 and placed on standby in 1950. It was fired up again in 19 because of widespread outages du to an exceptionally severe icestorm which covered the entire eastern s of the province. Ward Black (left) and Robert Vautour

of the 1940s, 471 permanent employees worked for the Commission and the Saint John headquarters was no longer adequate. Commission Chairman Gaspard Boucher declared that a new building was necessary to solve the problem of overcrowding and, because the Commissioners wanted to be nearer the seat of government, Fredericton was chosen to be the site of the new head office. In October 1949 the Commission moved to 527 King Street, one block west of the Legislative Assembly.

The new head office building in Fredericton, 1949

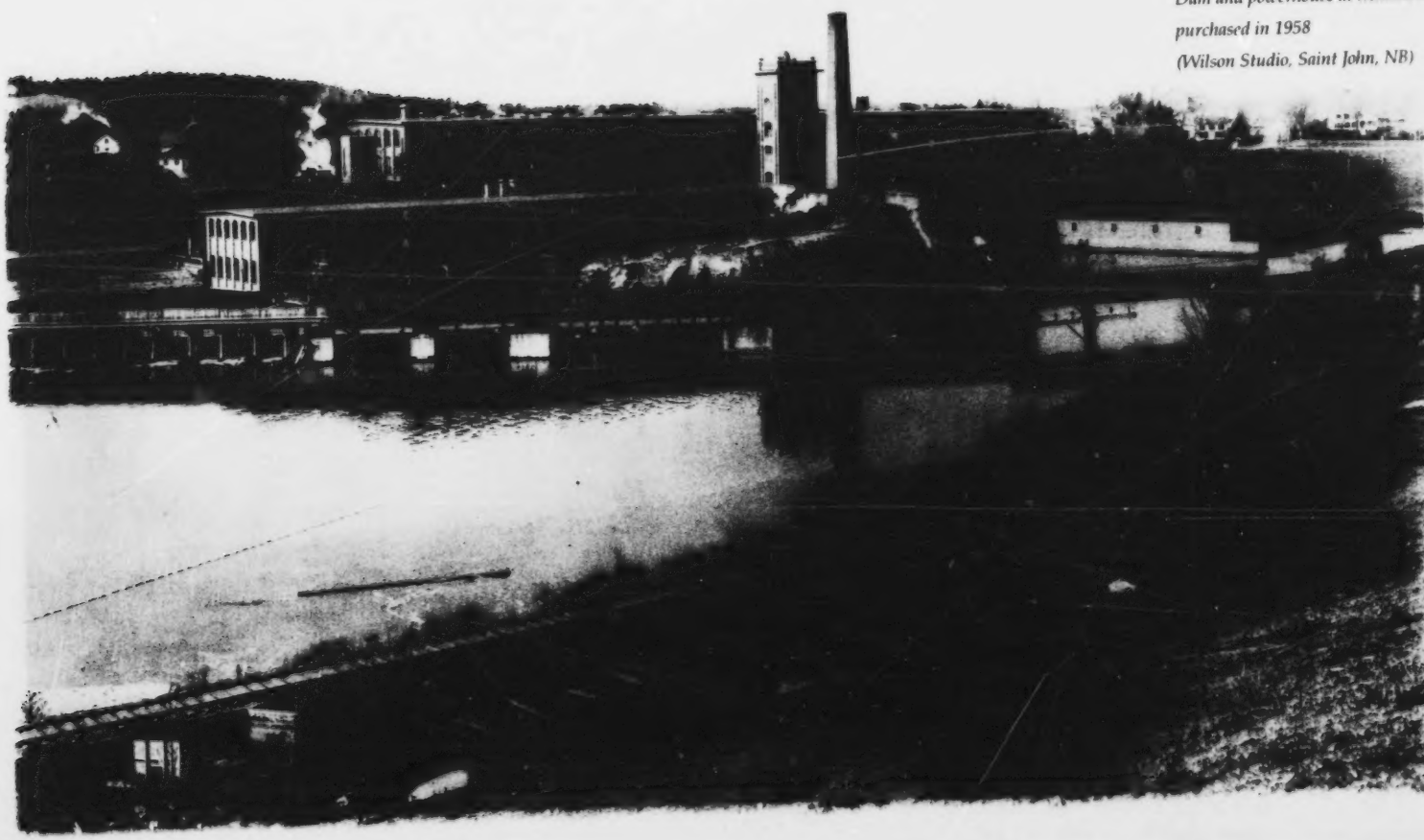


The machine room, head office, 1949

1950 the nineteen fifties - the hydro years

If the 1940s was a period of growth brought on by the war, then the following decade brought a recognition that if the Commission was to serve its customers properly and contribute to the economic and social growth of the province, it would have to make changes to its structure and operation.

In the late 1940s the demand for electricity far exceeded the Commission's supply. To complicate matters, low rainfall had reduced the capacity of the hydro plants to generate electricity. For the first time in its history, the Commission had to ration electricity, particu-



Dam and powerhouse at Milltown purchased in 1958
(Wilson Studio, Saint John, NB)

larly in Carleton County. Householders were asked to reduce their use of electricity between 4:00 pm and 8:00 pm. It was obvious that more generating capacity was needed. Surveys of potential hydroelectric sites along the Saint John River valley revealed several possibilities for the construction of power dams. The most promising site was on the Tobique River. A dam was built and the hydro plant began producing power in 1953.

The year 1953 was significant not only because it marked the opening of the Tobique dam, but also for other

Construction shot of Tobique dam, 1951 (R. H. Smith, Sackville, NB, August 1951)

Glen Kitchen demonstrating how to test high voltage gloves at the Service Centre, 1959

reasons. Perhaps the most important of these was the recognition that New Brunswick's commercial and residential demand for reliable and inexpensive electricity required a more sophisticated and diverse system of generation. Prior to the 1950s, hydro generation had produced only a small proportion of the province's electric energy, the greater part being generated by steam in thermal plants. But, while the Commission produced more kilowatts than ever before, the need for maximum amounts of electricity at peak times was such that planning for the future had to be

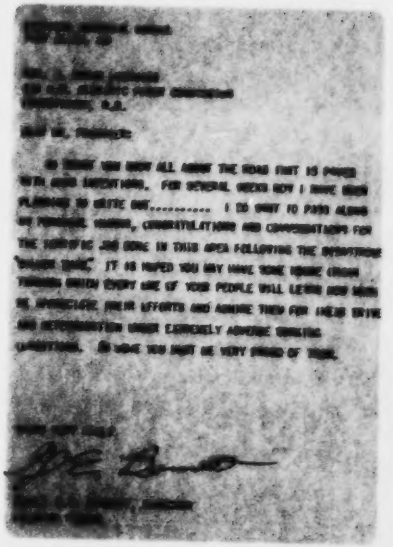
On January 2, 1956, a severe ice storm struck the eastern side of the province. After 10 days of continuous freezing rain and sleet, 423 miles of distribution line and 10 miles of 69 kV transmission lines were knocked down. At the height of the storm, 23,000 customers were without electricity

Ice storm damage

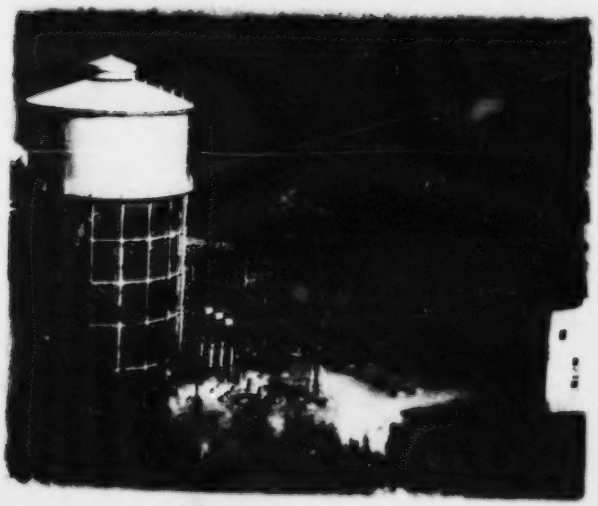
based on a generating system of integrated and interconnected hydro and thermal plants.

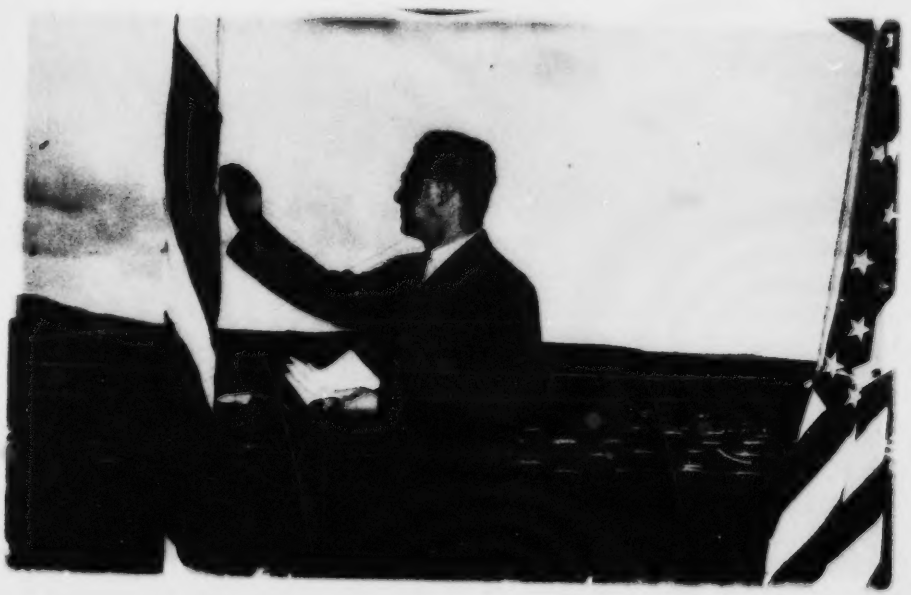
During the 1950s, electric utilities in New Brunswick, Nova Scotia, and Prince Edward Island operated as totally isolated entities. By the end of the decade, New Brunswick had broken that trend when the Commission established the first interconnections in the region with two small utilities in Maine.

Changes were not only taking place in operations. As the Commission's activities expanded and became more sophisticated, it became necessary to introduce



Grand Falls generating station, purchased in 1959



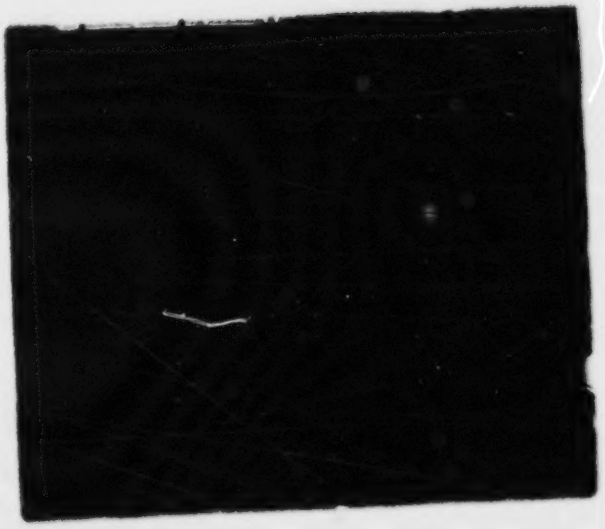


Premier Hugh John Flemming opening Beechwood hydo plant June 11, 1955

changes in administration to keep pace with the inherent complexities of growth. In 1957, Reginald Tweeddale, the chief engineer, became the Commission's first general manager. He assumed responsibility for all operating functions and established a strong executive committee made up of department heads to deal with such crucial matters as rate structure, expropriations and industrial development strategy.

In 1953 the Commission, and seven locals of the International Brotherhood of Electrical Workers, representing over 400 employees, signed a collective agreement for the first time.

Reginald Tweeddale, general manager



Labour leader H. C. Tracy and Hon. Edgar Fournier signing the first collective labour agreement between The New Brunswick Electric Power Commission and the local unions of the International Brotherhood of Electrical Workers (AFL), 1953 (Daily Gleaner, Fredericton, NB)

Graduates of the first li class, a three-week cou

the nineteen sixties - over a billion kilowatts generated

1960

Between 1960 and 1975 total in-province demand for electric energy increased 12% per year - well above the national average. The Commission needed more energy on its system to meet the increasing demands of a changing industrial base and a growth in population.

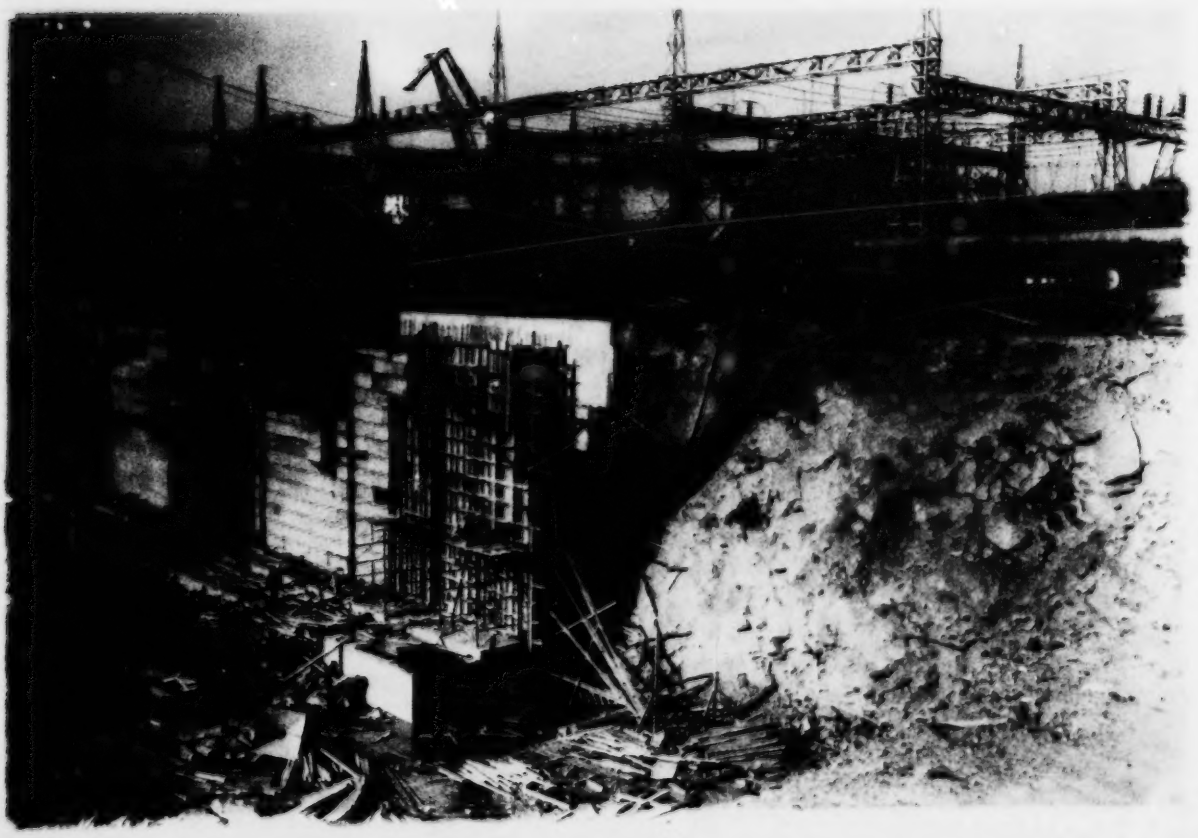
Industrial growth, particularly in the southern part of the province, made a firm base of electrical power vital if New Brunswick were to grow and prosper. Construction started in 1959 on a new thermal plant at

First bucket trucks arrive at the Fredericton railway yards, November 1962

Courtenay Bay, adjacent to the Saint John Shipbuilding Company. Courtenay Bay was the Commission's first high temperature, high pressure thermal station and the first 50,000 kilowatt unit went on line in December 1960. A second unit was placed in operation five years later and in September 1966 a third unit of 100,000 kilowatts was completed.

The largest single construction project ever

Arthur J. O'Connor, appointed gene manager in 1967 and president in 1986



Courtenay Bay under constructio 1965

undertaken in the province began in 1965 at Mactaquac, 12 miles up the Saint John River from Fredericton. An earth-filled dam with concrete sluiceways was constructed across the Saint John at a cost of $128 million. The dam raised the water 130 feet above its original level and created a headpond more than 60 miles in length. The plant was designed to add a total of 600,000 kilowatts of power to the system in a phased-time

1964 marked the start of the 25 Year Club - its first president was Miss Louise Glennie. Back row - Herb Steeves, secretary treasurer (left) and Walter Allen, vice-president

The new computer room, 1961. The modern administrative infrastructure which evolved in the 1950s required more sophisticated business systems. Changing over from conventional to electronic accounting was a highlight of the 1961 fiscal year

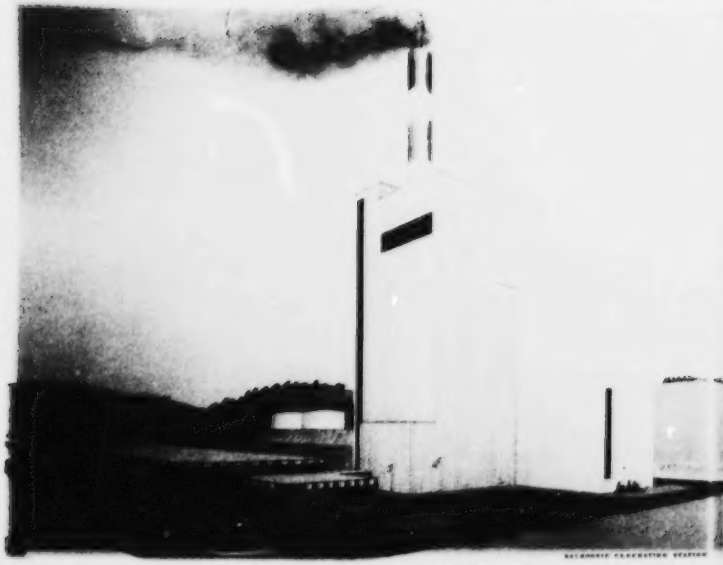
schedule. The first three units became operational in 1968.

Northern New Brunswick was also experiencing rapid growth in the demand for electricity and the Commission responded by building the Dalhousie generating station. This generating station began operating in September 1969 and provided 100,000 kilowatts of power to the system.

The Commission, in common with other electric utilities, had been following a general planning rule that any

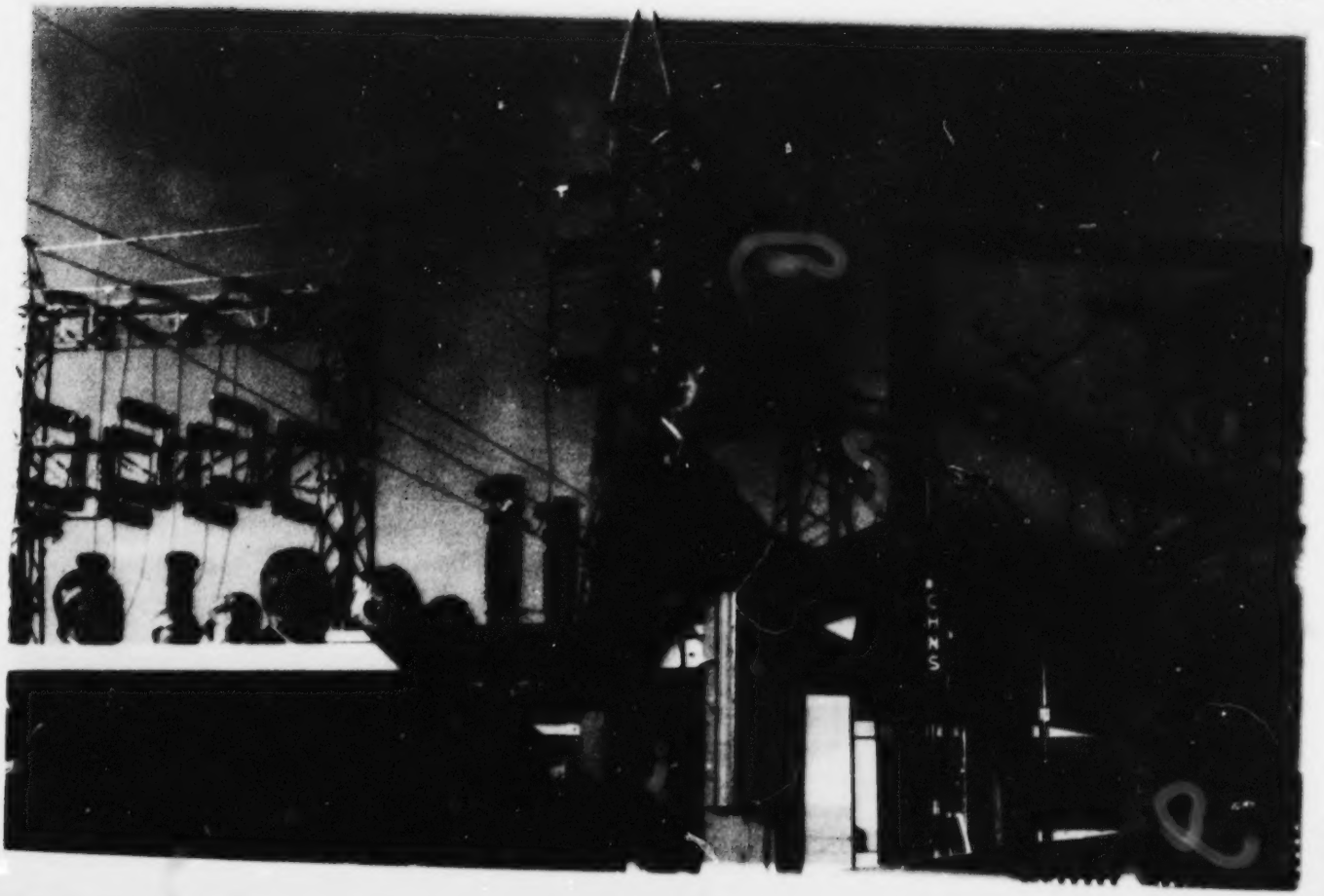
The Marysville Service Centre, 1968. This building was needed to house an ever-expanding inventory. The Stores section of the service centre was destroyed by fire in October 1981 but was rebuilt by summer 1983

Artist's impression of Dalhousi



new generating station should not be larger than one-tenth of the size of the utility's entire system. During the 1960s, however, the idea of interconnecting with larger neighbouring utilities developed. Interconnections meant that larger generating stations could be built, allowing the Commission to benefit from economies of scale since the cost per kilowatt produced at a large generating station is less than the cost per kilowatt produced at a small plant.

Robert Stanfield opens the first interconnection to Nova Scotia on September 21, 1960



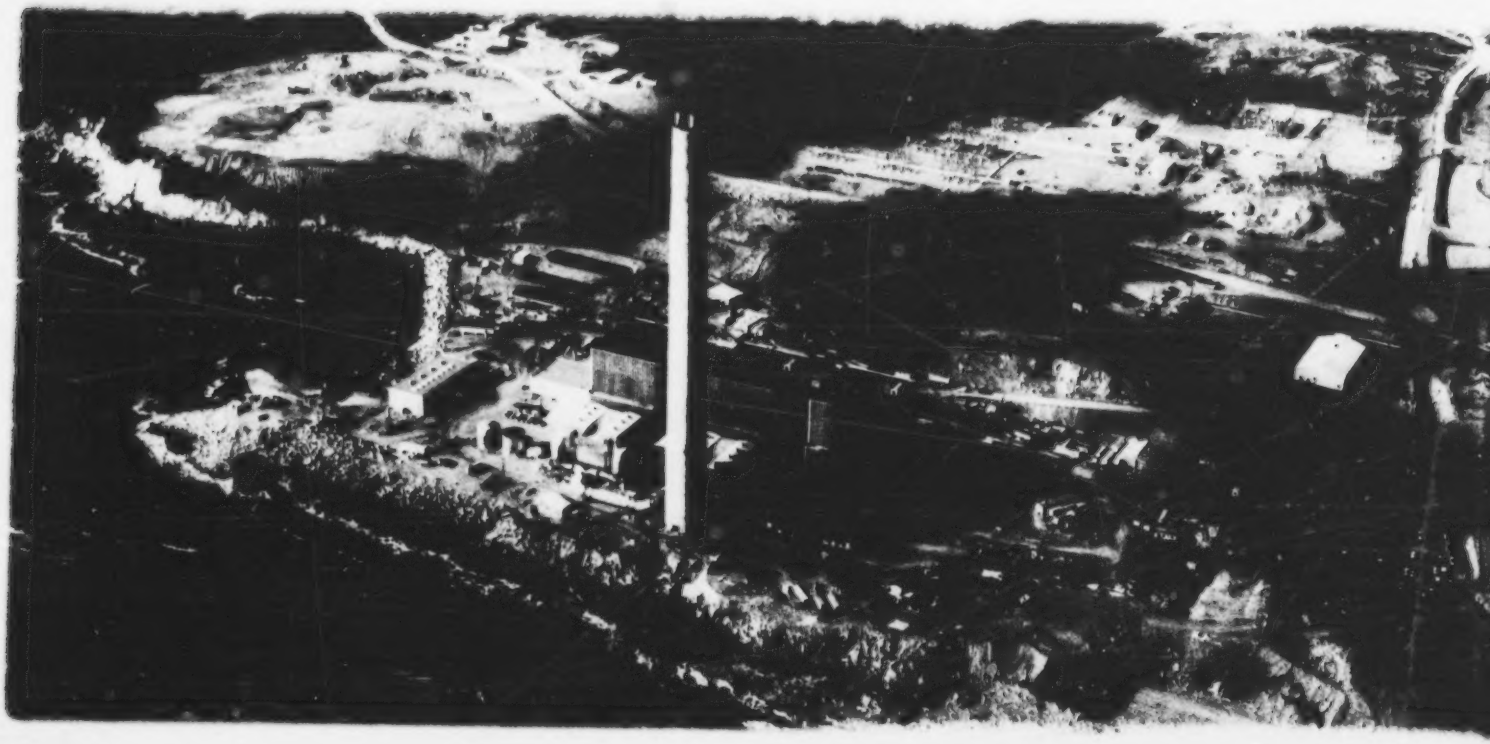
the nineteen seventies - the energy crisis

1970

The development of interconnections had an immediate impact on the utility. A participation contract with New England utilities made it possible to build three 335 megawatt units at Coleson Cove. This new plant was destined to become the largest on the Commission's system. It was designed to burn oil which had become plentiful and cheap following the Second World War. Construction, begun in 1972, was completed by January 1977 when all three units were producing power for commercial use.

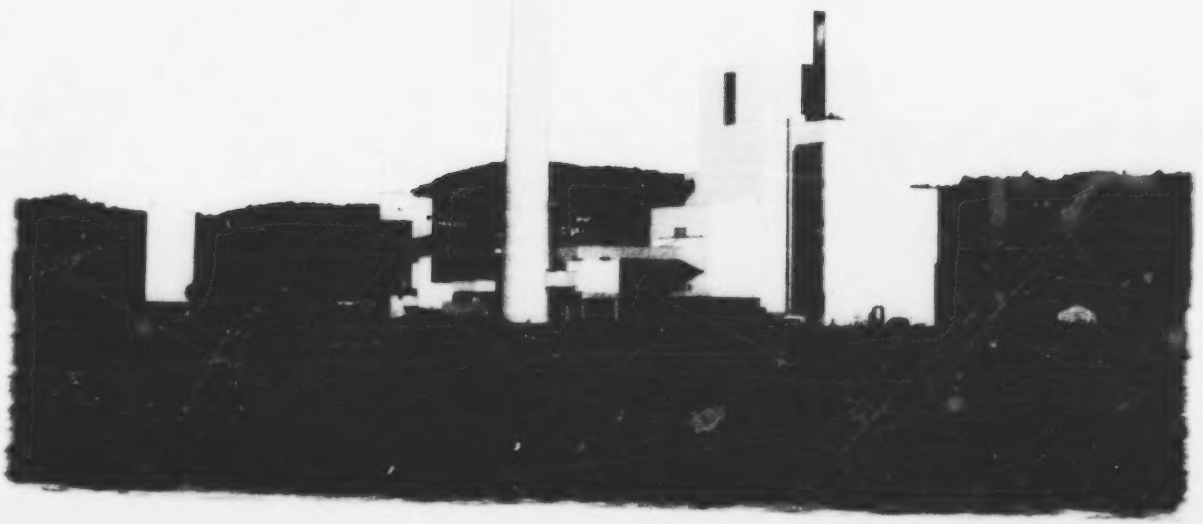
The construction of Coleson Cove coincided with the worldwide energy crisis when the price per barrel of oil soared from $3 in 1972 to almost $37 a decade later. Responding to the insta-

Coleson Cove
(Wilson Studio, Saint John, NB. October 1975)



bility of the world oil market, the federal government guaranteed loans for up to 50% of the capital cost for the construction of the first nuclear unit in a province-at federal interest rates.

In New Brunswick, nuclear power had been considered as early as the 1950s. At a district meeting in Saint John in November 1956, Reg Tweeddale, then assistant chief engineer of the Commission, said that atomic power was not being overlooked as a generation possibility for New Brunswick, and that Commission officials had been meeting annually with Chalk River authorities, familiarizing themselves with new developments in nuclear power. Tweeddale told his audience "possibly within the next 15 years



Dalhousie II was built to burn coal but could be easily converted to oil

atomic energy will be of vital interest in the Maritime provinces in regard to the development of cheap hydroelectric power."

Although NB Power engineers were keen to get involved with this new technology, it was not until the 1970s that serious planning was initiated. The Point Lepreau site was chosen over 20 others because its proximity to the Bay of Fundy promised deep and relatively ice-free water for the plant's water-cooling system. Construction started in May 1975 and was completed in 1981. At peak construction, the project employed 3300 workers.

The instability of the oil market during the 1970s complicated planning to meet future demands for electrical energy. The

Point Lepreau calandria arriving
1977

Commission investigated a number of options. One was to buy hydroelectricity from Hydro-Quebec which had a surplus as a result of the recently developed Churchill Falls. A problem presented itself: how to import power from Quebec without endangering the network of interconnected utilities in eastern North America to which the Commission was linked via its interconnection with the state of Maine. This technical problem was resolved in 1972 when the world's first commercial solid state high voltage direct current (HVDC) converter station was placed in service at Eel River, New Brunswick. Another option was to convert existing thermal plants to enable them to burn coal as well as oil. Consequently, future

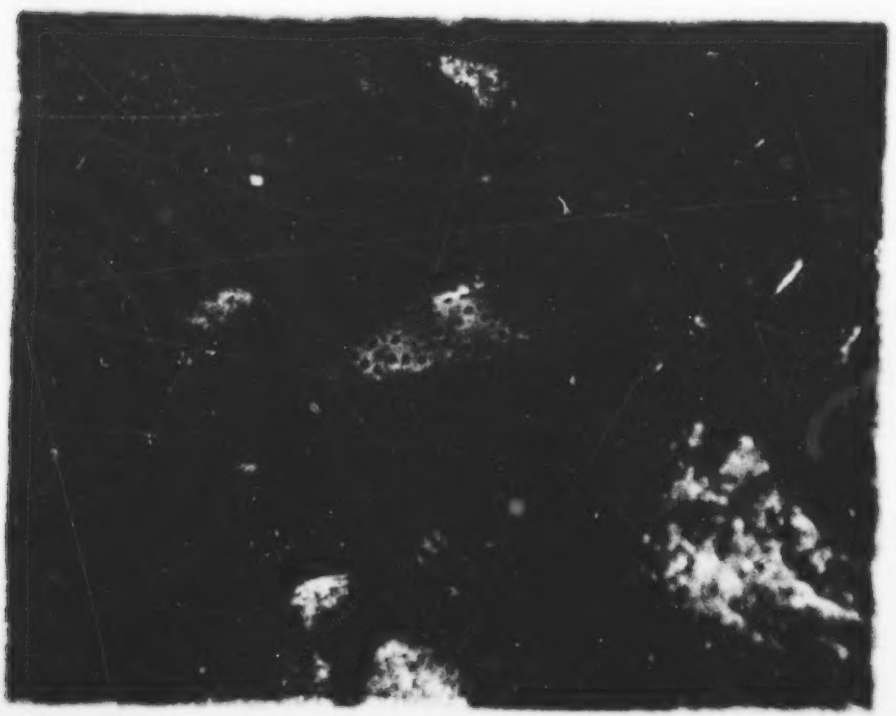
Solar energy panels and wind-powered generator, Shediac

generating units were designed to burn more than one type of fuel or a combination of fuels.

Hand in hand with higher prices for oil came a renewed emphasis on energy conservation and environmental protection resulting in several original projects. One such project involved raising trout and Atlantic salmon in ash ponds heated with warm water from the Grand Lake generating station. This experiment in fish farming was an unqualified success and led to a second fish farming operation at Mactaquac in 1984. Alternative energy sources such as windmills and solar energy were also considered not only to reduce New Brunswick's dependence on foreign oil, but also as a method of electrical generation that was less harmful to the environment.

The energy crisis

Fish-rearing ponds at Grand Lake



contributed to an economic recession in North America. As people became more concerned about income protection, companies responded with new benefits for employees. At the Commission, two major changes in employee benefits materialized during the decade. In 1975, life insurance was changed from a flat rate to an amount equal to four times an employee's salary and long-term disability benefits were introduced.

During the 1970s, The New Brunswick Electric Power Commission sought to change its corporate name and symbol to reflect its modern operations. The new symbol of rotating arrows and a bilingual "Énergie NB Power" were adopted. The new logo, used to identify NB Power on everything from letterhead to hard hats to service trucks, became synonymous with electricity in New Brunswick.

Dana Ellison examining artifacts at the 25 Year Club Museum Mactaquac, 1979

the nineteen eighties - the nuclear age

1980

The 1980s may best be remembered as NB Power's entry into the nuclear age with the opening of the Point Lepreau nuclear generating station. The decade was also marked by a renewed emphasis on interconnections and export contracts with other utilities, the consolidation of the use of New Brunswick coal as a reliable source of energy, the beginning of new research and development programs, the application of computer technology to all facets of NB Power's operations, and a recognition of the importance of conservation and the environment.

In 1980, the Commission's total generating capacity stood at over

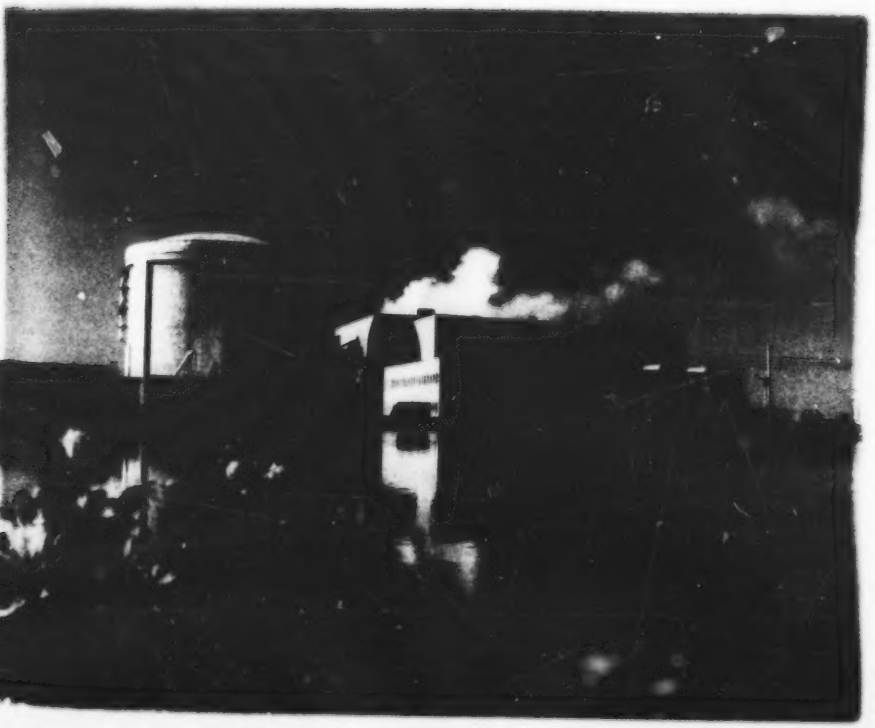
The 50m³ "Maid Marion" dragline

The first dragline in the Minto coal fields owned by the Rothwell Mining Co., circa 1914

2,500,000 kilowatts. This energy was being produced in six hydro plants, six thermal generating stations, one diesel plant, and a small combustion turbine unit. In December 1981, the construction of the nuclear generating plant at Point Lepreau was completed. Phased testing of the unit was carried out in 1982. By February 1983, the world's first Candu 600 was supplying energy to the NB Power grid. Within a very short time, it was supplying more than 30% of the electricity used in the province as well as providing one-third of its output for export sales.

The success of the Eel River interconnection, together with the need to

Point Lepreau operating (Tom Bochsler, Mainway Studio, Burlington, Ontario 51264E-51)



In 1988 the new Energy Control Centre in Marysville became operational. From this building interconnection sales and purchases are managed and in-province energy is distributed to residents, businesses and industries

strengthen the transmission capabilities in northwestern New Brunswick, led NB Power to negotiate a second major HVDC link with Hydro-Quebec just north of Edmundston. Completed in 1985, this project doubled the interchange capacity with Quebec and added 400 km of new high voltage 345 kV transmission line.

The decade also saw a change in NB Power's relationship with the coal mining industry in the province. In 1986 NB Power assumed ownership of NB Coal. The Minto coalfields, mined for over 350 years, are probably the oldest coal mines in North America still actively worked. The coal, which is extremely high in sulphur and

Frank Brittain of Central Technical Services checking Chatham stack for emissions

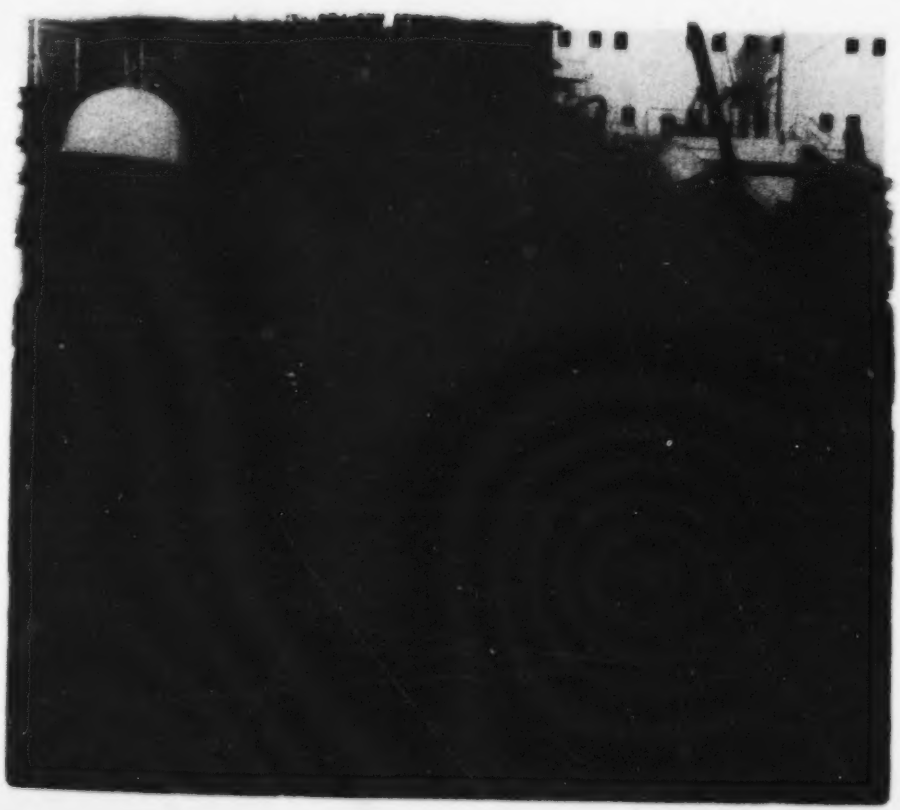
Meter reader, Brian Smith, using Itron to record power consumption at a residence, Fredericton District

expensive to mine, raised environmental concerns. New combustion techniques are currently being developed to reduce sulphur dioxide emissions from coal-burning plants.

Emphasis on research and development intensified during the 1980s. The successful research and development of a circulating fluidized bed boiler at the Chatham generating station permitted NB Power to diversify fuel types and experiment with new low-grade fuels. This advanced technology employs limestone in the combustion process to capture gases, which, if released into the atmosphere, produce acid rain.

By 1983, the growth of the utility placed a strain on the old head office

Unloading a shipload of Orimulsion™ at Dalhousie

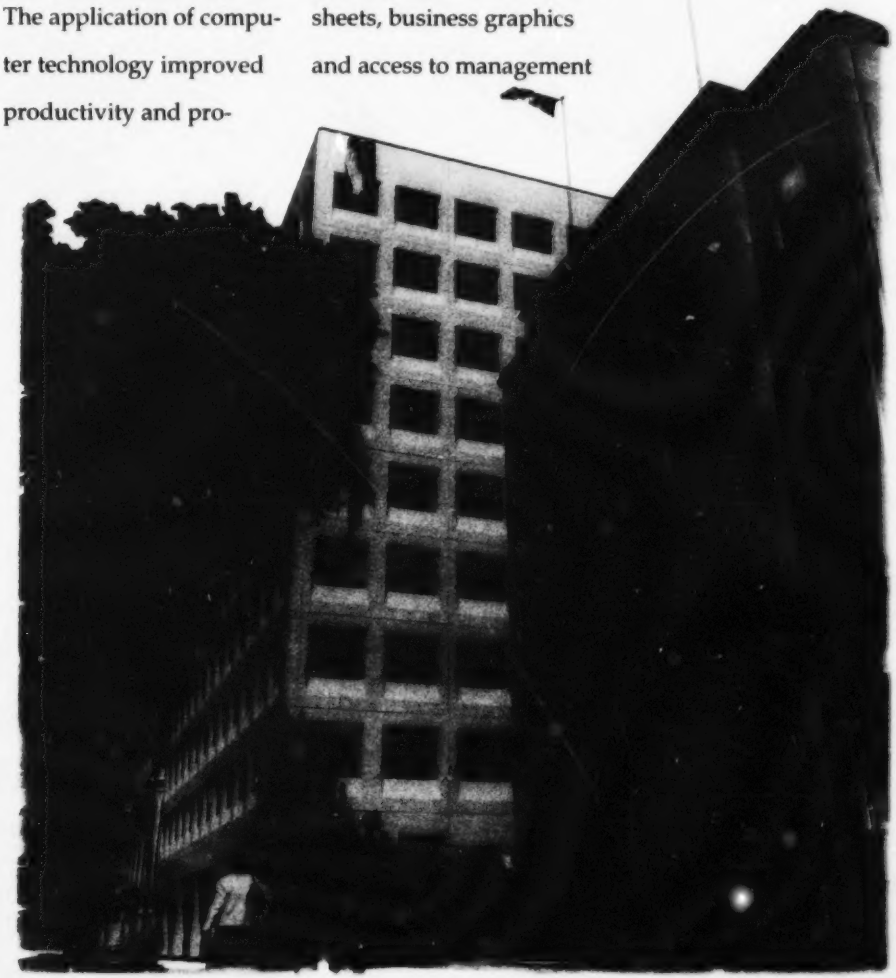


Cathy Cornfield, Chemical Technologist at the Coleson Cove generating station laboratory, analyses an effluent sample

building and employees moved next door to a new Bank of Montreal office building. Three years later, NB Power exercised its option to purchase the building and assumed ownership. The old headquarters became the home of the construction projects staff.

In the early 1980s, NB Power embarked on a long-range plan to develop computer systems. The application of computer technology improved productivity and provided ready access to information. The Commission installed an integrated office information system which includes electronic messaging, word processing, spread sheets, business graphics and access to management

New head office building, 515 King Street, Fredericton



Henry Bielecki, station manager, examining a tomato grown at Grand Lake. Warm water from the plant's condensers flows over the roof thereby heating the greenhouse. This reduces the price of heating by one third when compared with a conventionally heated greenhouse. The greenhouse is leased to a private interest

and project information. This was accomplished through a link to the mainframe computers installed in head office, the plants and districts. Technological advances have enhanced the areas of inventory control and computer-aided design, both of which are vitally important to construction and maintenance staff.

The efficient use of energy resources is crucial in an age when demand for nonrenewable energy sources is growing. During the 1980s, NB Power actively promoted programs aimed at the conservation of energy. Subsequently, residential, commercial and industrial customers received technical and financial assistance to aid in the development of energy-efficient facilities.

Frank MacLoon, president 1989

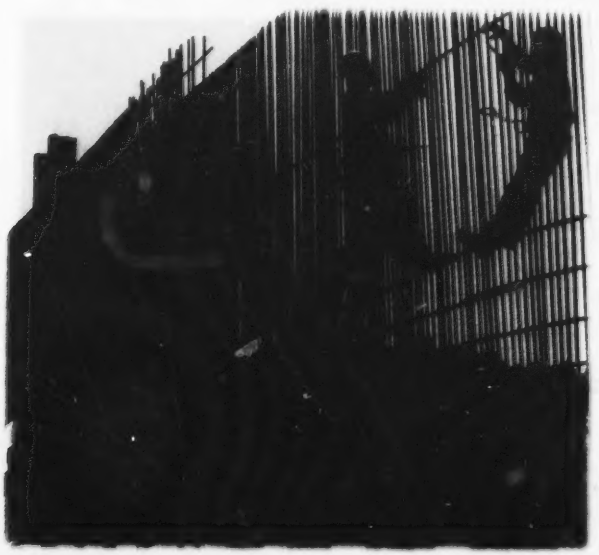
Water Street, St. Andrews, before and after underground wiring installation (Charles Mason, St. Andrews, NB)

1990

the nineteen nineties and beyond

This year marks the 70th anniversary of NB Power. There have been many changes in the utility over 70 years and there have been just as many changes in public expectations about NB Power's role in providing a service vital to New Brunswickers. Certain expectations, however, have remained fairly constant: the public's expectation that NB Power will produce a reliable supply of electricity at an acceptable price, that it will demonstrate a constant concern for the environment, and that it will encourage energy conservation.

NB Power has several major construction projects currently underway throughout the province. These projects are important if the utility is to meet the growing energy demands of the 1990s and beyond. Construction of the 450 megawatt Belledune generating station is presently underway. Recently a major contract valued at $120 million was awarded to purchase five large combustion turbines for installation at Millbank and Ste Rose. Several research and



Belledune generating station under construction, 1990

development and training programs are ongoing in the Saint John area.

Though developing new sources of electrical generation to meet the growing demands of New Brunswickers is important, maintaining due concern for the environment is equally as important. NB Power's tradition of excellence in the technical aspects of generating electricity is matched by its innovation in environmental protection. It has attempted to address environmental issues as they have emerged. The utility is doing its part to reduce emissions from its thermal generating stations. It has installed environmental control systems to remove particulate and help regulate plant air emissions. It is committed to a federal-provincial sulphur dioxide emission reduction program. Furthermore, at Belledune, NB Power is installing a "scrubber" to reduce SO_2 emissions.

Both energy conservation and efficiency play an important role in the environmental planning process, although often they are not recognized.

Sharing our facilities - ospreys nesting atop a hydro pole

Over the years, NB Power has introduced a number of energy conservation programs to help customers improve energy efficiency in their homes and businesses. In the spring of 1990 NB Power launched the first of its "Energy Wise" programs. The "Home Energy Check" provides free home energy audits by experienced Energy Advisers who give homeowners advice on how to save energy. To date, some 1,700 home visits have been made throughout the province. As a result of programs fostered or supported by NB Power, nearly $50 million has already been invested within the province on energy conservation measures.

NB Power is also attempting to meet the challenges of the 1990s in the workplace. The "Employment Equity" program strives to identify and correct inequities that exist in the workplace. The gradual progress that has been made in the trades by women and minority groups is balanced by the significant increases made in the professional groups over the past five years. The number of women involved in personnel,

Planning supervisor, John Theriault and his son John Abraham Theriault II at the launching of the Woodhog I. The boat keeps the Mactaquac headpond clear of floating debris

information systems, accounting, public relations, procurement and real estate has grown by 35%. The "Employment Equity" program at NB Power will enter a significant phase with the beginning of a process that will result in pay equity or equal pay for work of equal value. Other challenges in the work-place include flexible hours, daycare, paternity leave and health and benefit programs that respond to the needs of employees.

Every decade since the 1920s has offered a different set of challenges for NB Power, but the goal of providing a safe reliable supply of electricity for New Brunswick has remained the same. Past challenges, however difficult, were met by employees dedicated to the belief that their job was important if the benefits of electricity were to be supplied to all parts of the province. Although the challenges may be more complicated today than in the early years, the employee commitment to customer service remains constant.

Heather Gomez, "Pay Equity" program co-ordinator

NB Power generating plants

Plant	Plant type	Year of first service	Original owner	Year acquired by NB Power	Year retired
Saint John (Dock Street)	Thermal (coal)	ca.1893	Consolidated Electric	1948	1976
Milltown	Hydro	1911	Canadian Cottons Ltd.	1958	n/a
Kouchibouguac	Hydro	1917	Richibucto & Rexton Power Company	1939	1953
Musquash	Hydro	1922	NB Power	n/a	n/a
Grand Falls	Hydro	1928	St. John River Power Co.	1959	n/a
Grand Manan	Diesel	1929	Grand Manan Light & Power Company	1939	n/a
Grand Lake I	Thermal (coal)	1931	NB Power	n/a	1967-76
Saint Quentin	Diesel	1940	NB Power	n/a	1957*
Saint Stephen	Diesel	1946	Maritime Electric Co. Ltd.	1947	1952*
Andover	Diesel	1948	NB Power	n/a	1951*
Campobello	Diesel	1948	NB Power	n/a	1951
Chatham	Thermal (coal/oil)	1948	NB Power	n/a	n/a
Shippagan	Diesel	1948	NB Power	n/a	1951*
Grand Lake II	Thermal (coal)	1952	NB Power	n/a	n/a
Tobique	Hydro	1953	NB Power	n/a	n/a
Beechwood	Hydro	1957	NB Power	n/a	n/a
Courtenay Bay	Thermal (oil)	1961	NB Power	n/a	n/a
Sisson	Hydro	1965	NB Power	n/a	n/a
Mactaquac	Hydro	1968	NB Power	n/a	n/a
Dalhousie	Thermal (oil/coal)	1969	NB Power	n/a	n/a
Moncton	Combustion turbine	1971	NB Power	n/a	n/a
Coleson Cove	Thermal (oil)	1976	NB Power	n/a	n/a
Point Lepreau	Thermal (nuclear)	1983	NB Power	n/a	n/a
Grand Manan	Combustion turbine	1989	NB Power	n/a	n/a

** Removed from regular service-remained on standby for varying periods*